

## DKPS-4A

### POWER SUPPLY / CHARGER FOR ACCESS CONTROL AND EGRESS DOORS

*This power supply should be installed in compliance with the National Electrical Code(NFPA 70) CSA C22.1, Canadian Electrical Code, Part 1 and all applicable Local Codes. Installation to be performed by suitably qualified technical personnel.*

#### Description

The DKPS-4A series of power supply/charger supplies a total of 4 amp nominal continuous supply current @ 12/24VDC outputs. It is installed in a large mild steel enclosure capable of accommodating one or two 12AH lead acid rechargeable batteries. The power supply DKPS-4A has been evaluated for: UL294, CAN/ULC-60839-11-1,CAN/ULC-S533.

#### General Specifications:

1. Input = 120-240VAC 50-60Hz, 1.8 Amp maximum draw, fuse at 4 Amp
2. Output 4 Amps continuous supply current PF 0.6 at nominal 12/24 VDC.
3. Built-in dedicated charger for sealed lead acid or gel cell type batteries.
4. Maximum battery charging current 1.5Amps (not part of the max output current rating).
5. Automatic switch over to stand-by battery upon AC failure or below 69.5 VAC.
6. Battery presence detection within 10 seconds.
7. Temperature Compensated Battery Charger.(EN54-4 only,not UL evaluated)
8. Battery Charger Monitor.
9. Battery load test every 48hr.
10. Battery test result indication.
11. Battery Reversal protection.
12. Low Battery indication at 11.40/22.80 Volts.
13. Low Battery disconnect at 10/20.2 Volts.
14. Low Battery, Battery disconnect, No Battery presence, battery charger trouble reporting. (See FAULT TABLE)
15. AC input indication by Green LED. (LED on when AC is present).
16. AC Fault CMOS Relay contact for AC failure
17. LEDs display on enclosure door (Green, Yellow, Blue).
18. DC output indication by Blue LED, on board and enclosure.
19. Overload and short circuit protection on DC output.
20. Battery charging leads included.
- 21 Board Dimension: 195mm x 110mm
22. Enclosure Dimension: 338 x 448 x 110mm(HP346 for 12AH Battery)

### **Technical Specification:**

Output Voltage Output Amperage Ripple	12/24 Vdc Regulated. Class E, unsupervised 4 Amp 50 mVp-p max
Charging Current Battery Charging Voltage	1.5A Max, and not part of max output rating 13.8V/27.6V Nominal
Operating Temperature	0deg.C to 49deg.C

### **Performance Ratings**

UL 294 Performance Levels:

Model	Product Type	Line Security	Destructive Attack	Endurance	Standby Power
DKPS-4A	Power Supply	I	I	IV	III (when used with 12AH battery)

CAN/ULC-60839-11-1 Performance Grades:

Model	Product Type	Grade	Grade Achievement
DKPS-4A	Power Supply	3 (when used with 12AH battery)	Connect AC & Battery Trouble Relay Outputs to a Grade 3 Control Unit, to achieve Grade 3.

### **LED Indications**

#### **1. Green LED - AC indicator**

- a. On when AC present.
- b. The AC fail Relay activates (opens) within 60 seconds after AC failure.

#### **2. Blue LED – DC Power indicator**

- a. Powered directly from the power supply DC output and indicates output is present.

#### **3. Yellow LED – Battery Charging and Fault indicator**

- a. The Yellow LED flashing indicates the battery is charging and is also used to indicate various Fault conditions. See the Fault Condition and Indication Table for details.

#### **4. Red LED –Battery/Charger test Indicator for Pass or Failure.**

- a. The Red LED indicates a Battery test Failure or a Battery charger Failure in conjunction with the Yellow LED to indicate other Fault Conditions. See the Fault Conditions and Indication Table for details.

**Relay Outputs:**

<b>Output</b>	<b>Output Type</b>	<b>Description</b>
AC FAIL	NORMALLY CLOSED OPEN = FAULT	TRIPS WITHIN 60 SEC. AFTER AC FAILS CMOS RELAY RATING: 30VDC 60mA 16 OHMS
BATTERY FAIL	NORMALLY CLOSED OPEN = FAULT	BATTERY PROBLEM CMOS RELAY RATING: 30VDC 60mA 16 OHMS

**Fault Condition & Indications:**

<b>FAULT</b>	<b>LED-G</b>	<b>LED-Y</b>	<b>LED-R</b>	<b>BATT RELAY</b>	<b>AC RELAY</b>	<b>LED-B</b>
BATTERY REVERSED OR NOT CONNECTED		ON		OPEN		
BATTERY LOW		ON		OPEN		
BATTERY DISCONNECTED		ON		OPEN		
BATTERY TEST FAIL		ON	5 RAPID FLASHES STOP 1 SECOND REPEAT UNTIL BATTERY IS REPLACED	OPEN		
BATTERY TEST OK		OFF	3 FLASHES 1 SEC ON/OFF			
CHARGER FAIL			10 RAPID FLASHES 2 SECONDS STOP AND REPEAT UNTIL OK	OPEN		
AC FAIL	OFF				OPEN WITHIN 60 SEC	
DC FAIL/OVERLOAD						OFF

## **Battery Operating Values**

<b>Parameter</b>	<b>Output</b>	<b>Description</b>
Battery Disconnect voltage	10/20.2V	When AC is off, the battery is disconnected when the battery voltage drops below this value.  The battery is only reconnected when the AC is restored.
Minimum battery voltage to pass battery test	11.50V 23.0V	Red LED Flash 1 sec ON/OFF during 2 minutes testing. Battery Fail 5 rapid flashes and 1 sec pause. Replace battery or batteries.
Low Battery Voltage Warning	11.40V 22.80V	If the output voltage drops below this value a voltage low warning is generated. See Fault Conditions and Indication table.

## **Optional Temperature Compensated Charging Voltages for EN-54 only, not evaluated by UL**

<b>Temperature Degrees Celsius</b>	<b>Charger Voltage 12 Volts</b>	<b>Charger Voltage 24 Volts</b>
-10	14.1	28.20
0	14.0	28.00
10	13.9	27.80
20	13.75	27.50
30	13.65	27.30
40	13.50	27.00
50	13.40	26.80
>50	Charger off	Charger off

# Installation Instructions

***This power supply should be installed in compliance with the National Electrical Code(NFPA 70), CSA C22.1, Canadian Electrical Code, Part 1 and all applicable Local Codes. Installation to be performed by suitably qualified technical personnel.***

- 1 Mount the power supply in the desired location using the 4 mounting holes.  
***NOTE: For use in Indoor Protected Area with Controlled Environment only. Do not Install Power Supply in Exterior Conditions.***
- 2 With the Mains power disconnected, connect the leads to the AC Input Terminal Block, respecting the wiring phase and polarity :  
**Ground/Earth=Green/Yellow, Neutral = Blue (White), Live =Black (Brown).** This equipment must be connected to the 120-240 Volt Mains via a readily dedicated accessible external disconnect device with maximum 15 Amp branch protection. Select the operating output DC voltage 12/24 with the jumper SW1. SW1 ON=12VDC, SW1 OFF=24VDC.
- 3 ***Do not connect the battery at this time.***
- 4 Switch ON the AC. Green LED will come ON indicating AC is present and the AC Fault Relay will be energized "ON" (closed). When the AC is off the AC Fault Relay will drop open within 60 seconds (Factory set) activating the CMOS output contact "AC Fail". Connect this output to relevant monitoring devices.
- 5 Verify the DC output voltage is correct = 13.20VDC or 26.40VDC max. Blue DC LED will be ON to indicate DC output is OK.
- 6 Yellow LED will be on and the BAT FAULT CMOS relay open indicating the Battery is not present or connected with reversed polarity.
- 7 Connect the Battery or Batteries respecting the polarity. Battery shall not be connected if AC is not present first.
- 8 If the battery is connected with the correct polarities the Yellow LED will turn OFF (See Fault Conditions and Indications Table). Within one minute the Battery Fault Relay will restore and the Yellow LED will flash once every 2 seconds.
- 9 If the battery is connected reverse polarity, the Yellow LED will be ON. (See the Table Fault). The CMOS relay will open indicating Battery Fault. Connect this output to relevant monitoring devices.
- 10 Connect the devices to be powered to the output terminals marked "Vo- Vo+".
- 11 See below for installation of M.O.M.8ECB need 2 ELOR Resistors(2K2) provided. See Fig 1 & Fig 2.
- 12 If Tamper Switch is required use part # TSW1-02 or TSW2-02, see Fig 3.  
Use 2K2 EOLR (end of line resistor) Part #EORL-PWX2K2
- 13 Connect the fault relays to FACP or ACP for trouble indication.
- 14 Secure the enclosure with the provided key lock.

# **M.O.M.8ECB**

## **( Multiple Outputs Module )**

### **Description:**

The M.O.M.8ECB is a distribution controller to be used with Access Control Systems and Egress Doors. It provides 12/24 VDC through 8 electronic over-current protected outputs, each rated max. 2 amp(max. total current = 4 amp), each with electronic overcurrent. The 8 outputs will switch ON or OFF security devices such as Magnetic Locks, Electric Strikes, etc. It is to be connected to FACP or ACP via a NO or NC configurable contact input with EOLR 2.2k Ohms. (Part #EOLR-PWX2K2) Also it has another input for Reversed Polarity triggering for older version of Fire Alarm Control Panel. The M.O.M.8ECB has 2 status relay output, one with Dry Contact "Form C" to indicate output status and One Dry Contact "Form C" to indicate DC Failure on any of the 8 outputs.

### **Installation:**

#### **1. Output Connections**

There are 8 selectable outputs suitable for FAIL Safe config and FAIL SECURE config.

- 1) For Fail Safe operation connect the device positive to DC STANDBY OUPUT (+) on the M.O.M.8ECB. DC power is present in normal condition and will switch OFF when the FACP/ACP or Rev. Pol input is triggered. Fail Safe operation devices such as Magnetic Locks should be connected to this output as show on Fig. 1.
- 2) For Fail Secure operation connect device positive to DC ALARM OUTPUT (+) on the M.O.M.8ECB. DC power is not present in normal condition and will switch ON when the FACP/ACP input is triggered. Fail Secure Operation Devices such as Electric Strikes should be connected to this output.
- 3) In either configuration connect the negative of the device to the NEGATIVE terminal CN8

#### **2. Fire Alarm and Access Control interface connection**

Normally Open (NO), Normally Closed (NC) input or Polarity Reverse (Rev. Volt.) input are available to trigger the M.O.M.8ECB operation. Connect the positive (+) and Negative (-) from the FACP/ACP to the REV. VOLT terminals observing the polarity,(polarity is referenced in alarm condition) or connect the NO or NC from the FACP/ACP output to the "Fire Trigger Terminals". Install a 2K2 Ohms EOLR-PWX2K2 resistor at the FACP/ACP as show in Fig 1. Note: No EOLR on Rev. Pol.

### 3. Engineering RESET/REX Input

This option is available when the Jumper **JL** is removed (JL OFF). This will cause the M.O.M.8ECB to latch upon receiving alarm from the FACP or ACP with this option in place. When the FIRE/ACP TRIGGER resets, M.O.M.8ECB will only reset by activating the RESET/REX input.

**JL ON** will cause the unit to follow the FIRE/ACP TRIGGER. Install the 2K2 EOLR (end of line resistor) #EOLR-PWX2K2 at the key Switch or Push Button to perform this Operation.

### 4. Relay Output

- a) DC Fail: DC output fail at one or more of the 8 outputs will cause the (DC FAIL) Trouble relay to open (De-energize). Connect this output to monitoring device. (28Vdc, 300mA)
- b) Status Output: The **FACP or ACP** or Rev. Pol input will cause the dry contact Relay "Form C" to open (de-energize). Connect this output to monitoring device. (28Vdc, 300mA)

### 5. Cascade Connection

Two(2) or more M.O.M.8ECB units (maximum 20) can be connected together as follow: Connect the status output relay C and NC terminals from the 1st unit to the REMOTE RESET INPUT of the 2nd unit(not polarity sensitive) and remove the JR of the 1st unit. Install EOLR(2K2) on 2nd unit Fire Trigger terminal. If a 3rd unit needs to be connected the **JR** of the 2nd unit must be removed and so on for any additional unit. Ref to Fig.1.

**NOTE:** *If Latch Mode is used, only JL jumper on the first unit must be removed. Engineering Reset will be performed from the 1st unit.*

### 6. Reset Output on Power Up.

**JPW**, Jumper **ON**, will set the output **OFF** on **Power Up** or when a total loss of power occurs. To reset the power after powering back up, Switch ON / OFF the **Reset Key** switch for 2 seconds.

### 7. M.O.M.8ECB LED Indication:

LD1 to LD8 RED LED when ON indicates that the output is ON (enable). When OFF, the output is OFF, NO DC present (disable). The cause could be Overload or short on the output. Note: all 8 outputs are current limited set at 2.5Amp, rated max 2.0Amp. LDF Fire Green Led is normally OFF. It will switch ON upon receiving an Input from the FACP/ACP. This LED will stay ON following the status of the FACP/ACP input. If JL was removed this LED will stay ON until the manual RESET circuit resets.

# DKPS-4A



REGULATED POWER SUPPLY CHARGER  
UL/ULC LISTED AS FOLLOWS:

UL294, CAN/ULC-60839-11-1, CAN/ULC-S533  
FOR ACCESS CONTROL SYSTEM.  
NOTE: PLEASE REFER TO DKPS-4A INSTALLATION  
MANUAL, PART NO:DM4000 REV:02

This power supply should be installed in compliance with the National Electrical Code(NFPA 70) CSA C22.1, Canadian Electrical Code, Part 1 and all applicable Local Codes. Installation to be performed by suitably qualified technical personnel.

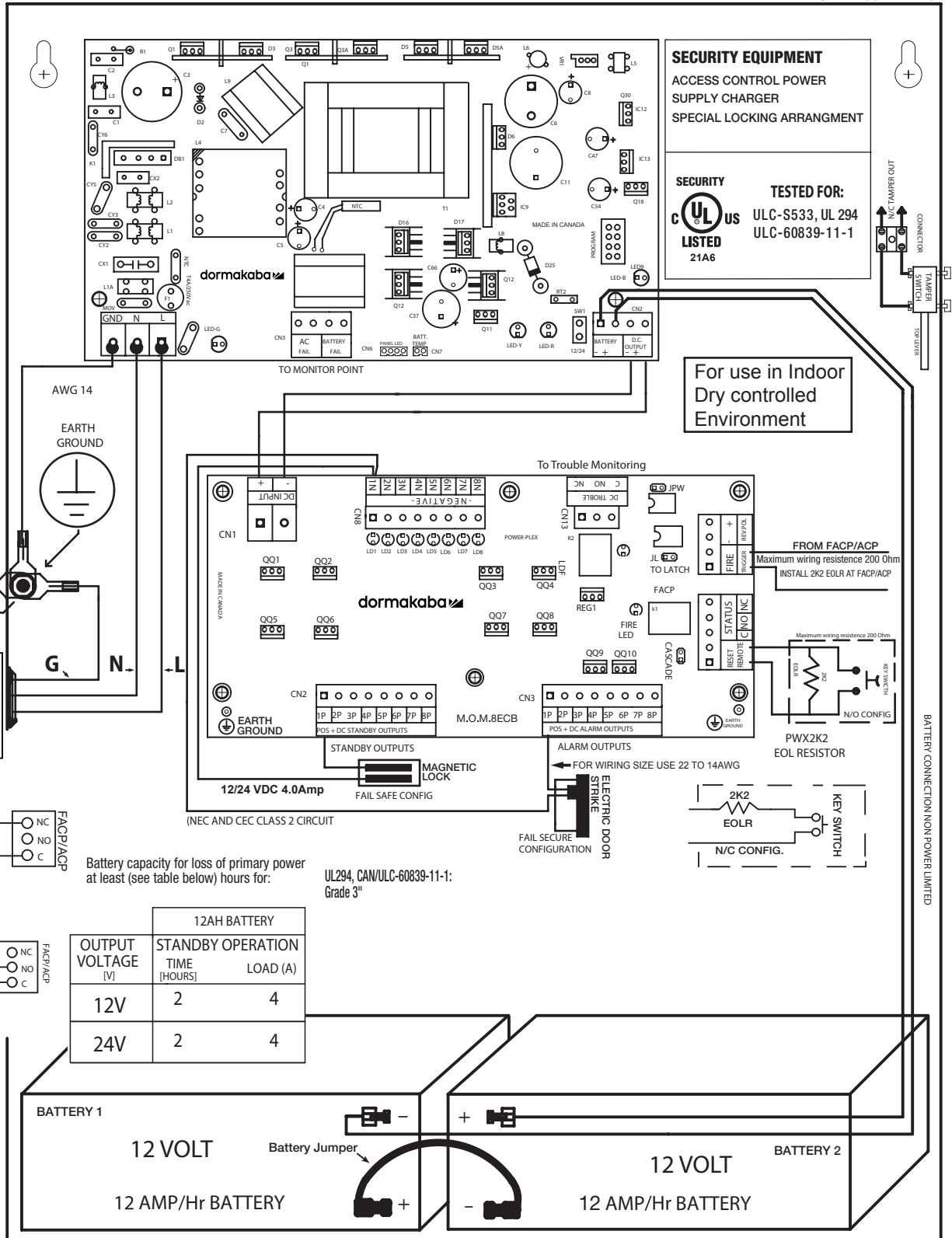
Date of MFG

PART NO:DM4001 REV:02

FEDERAL COMMUNICATIONS COMMISSION  
**FC**  
USA - CANADA  
REG#A1907195-C01-R05

**CE**  
REG#A1907195-C01-R04

**Industry Canada**  
REG# A1907195-C01-R06

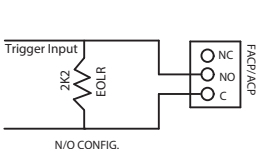
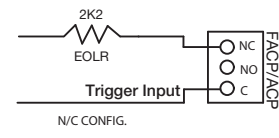
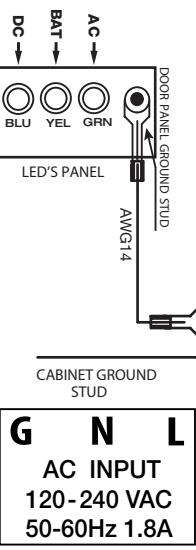


**SECURITY EQUIPMENT**  
ACCESS CONTROL POWER  
SUPPLY CHARGER  
SPECIAL LOCKING ARRANGMENT

**SECURITY LISTED 21A6**

**TESTED FOR:**  
ULC-S533, UL 294  
ULC-60839-11-1

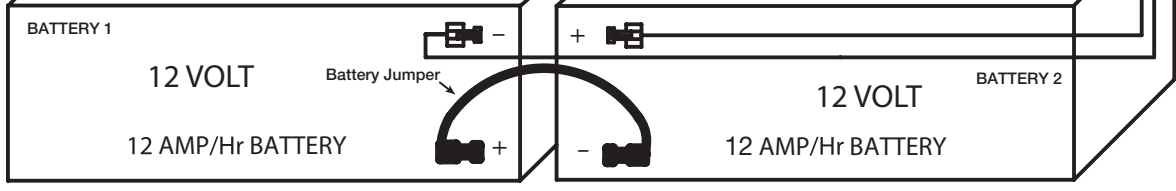
For use in Indoor  
Dry controlled  
Environment



Battery capacity for loss of primary power at least (see table below) hours for:

OUTPUT VOLTAGE [V]	12AH BATTERY	
	STANDBY OPERATION TIME [HOURS]	LOAD (A)
12V	2	4
24V	2	4

UL294, CAN/ULC-60839-11-1:  
Grade 3"



KEEP POWER LIMITED WIRING FROM NON POWER LIMITED WIRING AT LEAST 0.25" INCH APART

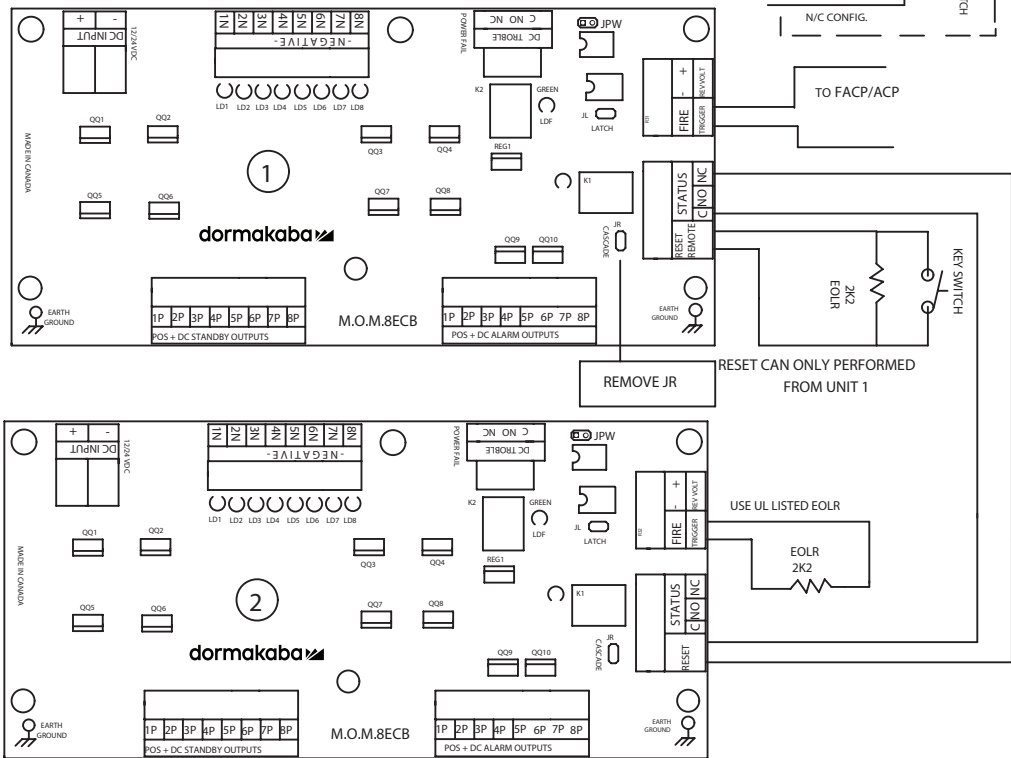
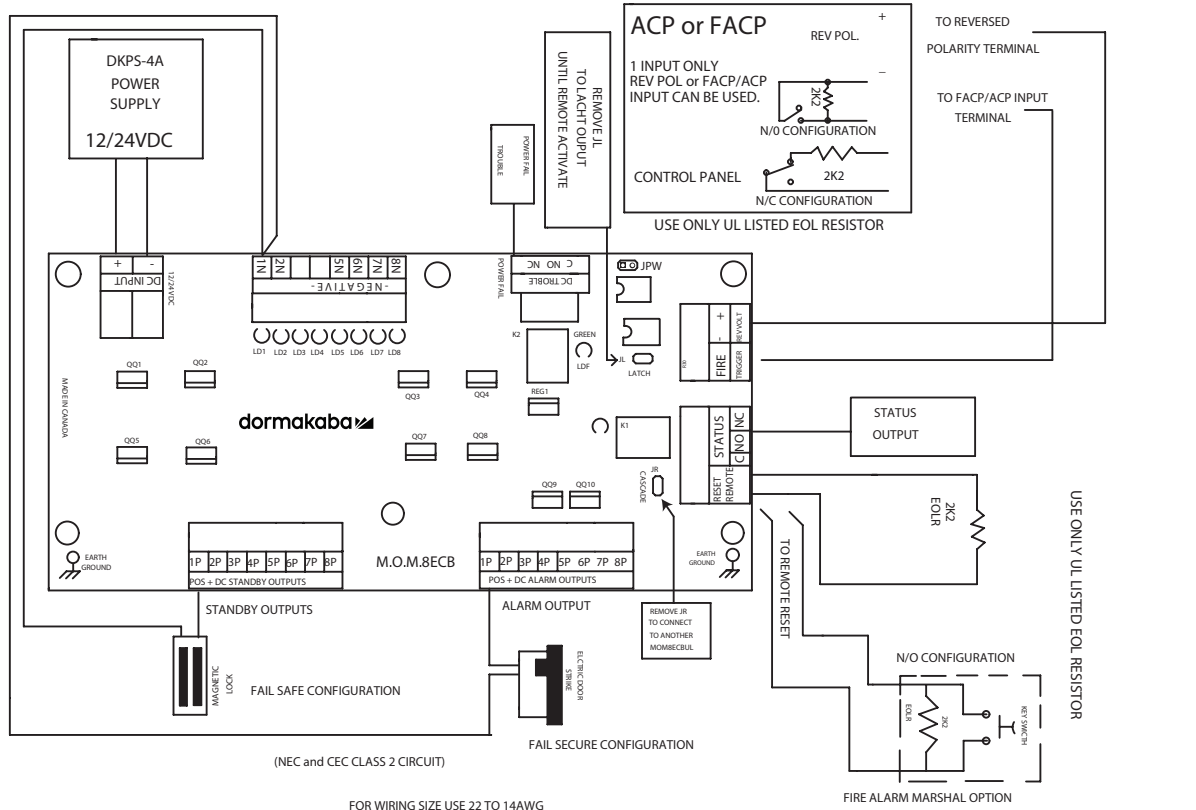
Fig. 1



# TYPICAL APPLICATION WIRING DIAGRAM

2 OR MORE M.O.M.8ECB CONNECTED IN CASCADE

PART NO: DM4003 REV:01



KEEP POWER LIMITED WIRING FROM NON POWER LIMITED WIRING AT LEAST 0.25" INCH APART

FIG.2

# Tamper Switch Connection

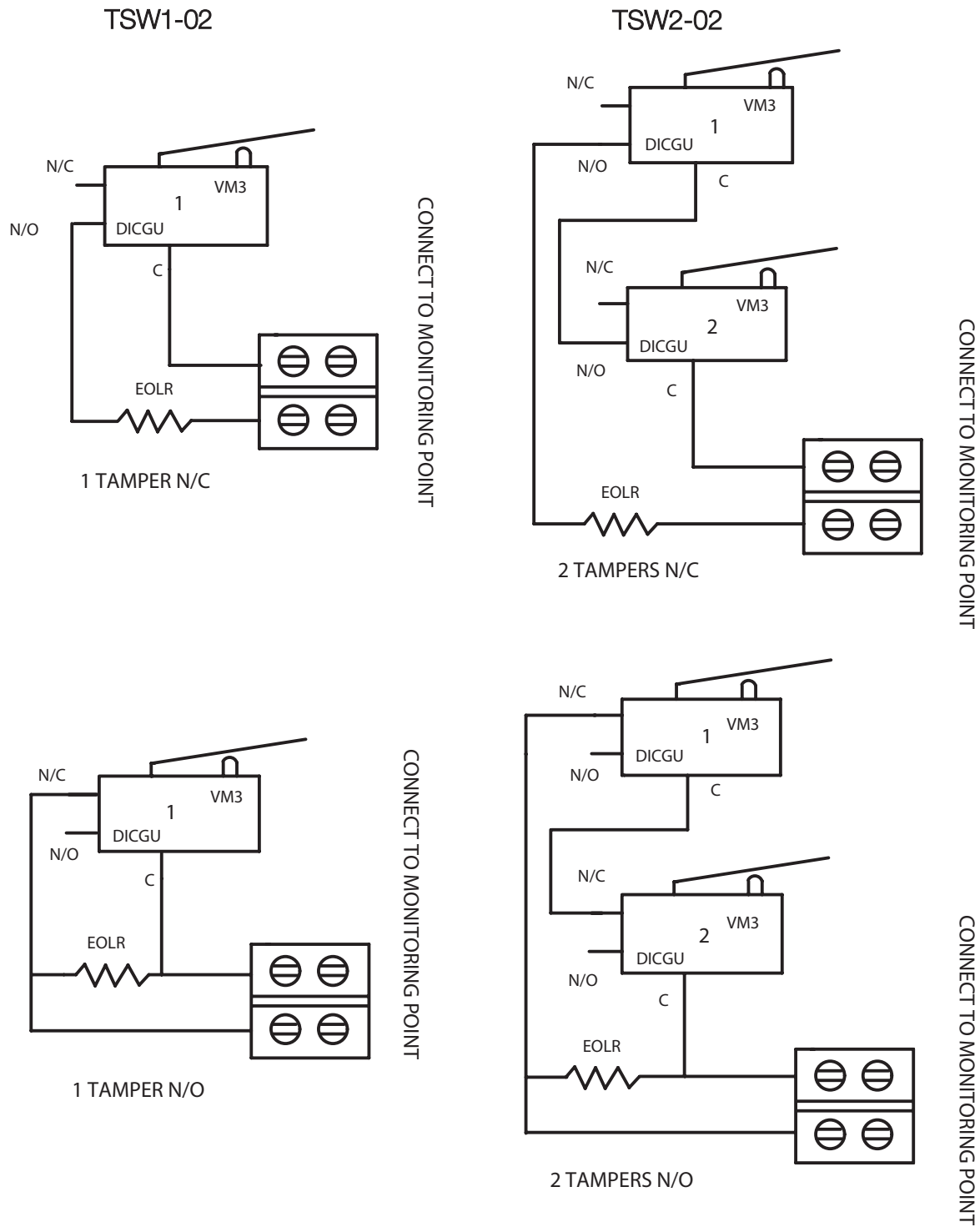


Fig. 3